

REMARKS

Applicants respectfully request reconsideration of the above referenced patent application in view of the amendments and remarks set forth herein, and respectfully request that the Examiner withdraw all rejections. Claims 1, 4, 5, 7-11, 13-17 and 20-24 have been amended. No claims have been canceled. No claims have been added. Thus, claims 1-17, 19-24 and 26 are pending.

Specification

The Office Action objects to the specification for allegedly failing to provide proper antecedent basis for the “storage medium” of claims 7-12, 20-24 and 26. The objection cites 35 U.S.C. §1.75(d)(1) and M.P.E.P. §608.01(o), which variously state that terms and phrases used in the claims must find “clear support or antecedent basis” in the description, and that the meaning of every term used in any of the claims should be apparent from the descriptive portion of the specification. For at least the following reasons, Applicants traverse the above objection.

Without agreeing as to the alleged basis of the above objection, and solely in order to advance the application to allowance, Applicants amend paragraph [0032] of the specification in order to provide antecedent basis for the specific term “storage medium” in the specification. Applicants respectfully submit that the amendments to the specification do not introduce new subject matter, insofar as the recitation of a “storage medium comprising content, which when executed by an accessing machine, causes the accessing machine to implement a method” was included in the claim language of the original disclosure. Accordingly, Applicants respectfully submit that the above objection be withdrawn.

35 U.S.C. §112 Rejections

Rejections under 35 U.S.C. §112, ¶1- Written Description

The Office Action rejects claims 1-17, 19-24 and 26 under 35 U.S.C. §112, ¶1 for failure to meet the written description requirement. More particularly, the Office Action alleges that new matter is introduced in the limitation “reusing the lookup table to encode a next data frame of the signal subsequent to the first data frame only if the next data frame of the signal is not an active voice data frame”. Applicants traverse the above rejection for at least the following reasons.

Without agreeing as to the alleged basis of the above rejection, and solely in order to advance the application to allowance, Applicants amend independent claims 1, 7, 13, and 20 to variously recite:

“...after encoding the first data frame of the signal, reusing the already generated first excitation to encode each subsequent data frame of the signal until a voice activity of the signal is detected...”

Applicants respectfully submit that a written description of the amended claim limitations cited above is provided in the original disclosure at least by FIG. 3 and by the following passages of the specification:

“As the real background or ambient conditions change, **scale factors can be used to match the composite excitation signal (the random noise being a component)** to the real environment. In short, the encoder need not generate a new random noise signal for each non active voice frame because **altering the scale factors only is sufficient to approximately match the scaled random noise** and resulting composite excitation signal to ambient noise conditions. An embodiment of the invention pre-computes random Gaussian noise to create a noise sample template and **re-uses the pre-computed noise** to excite the synthesis filter for each subsequent non active voice frame....”

- paragraph [0026]

“...The process loops for every subframe, 209, that is a non active voice subframe until the subframe is an active voice frame at which point the loop stops, 210.”

- paragraph [0028]

Therefore, Applicants respectfully request that the 35 U.S.C. §112, ¶1 rejection of claims 1-17, 19-24 and 26 be withdrawn.

Rejections under 35 U.S.C. §112, ¶2

The Office Action rejects claims 1-17, 19-24 and 26 under 35 U.S.C. §112, ¶2 for failure to point out and distinctly claim that which Applicants regard as their invention. More particularly, the Office Action alleges that the limitation “reusing the lookup table to encode a next data frame of the signal subsequent to the first data frame only if the next data frame of the signal is not an active voice data frame” somehow conveys a confusing concept of encoding a next data frame to a first data frame. Applicants traverse the above rejection for at least the following reasons.

As indicated above, Applicants amend independent claims 1, 7, 13, and 20 to variously recite:

“...after encoding the first data frame of the signal, reusing the already generated first excitation to encode each subsequent data frame of the signal until a voice activity of the signal is detected...”

Applicants respectfully submit that the above-cited amended claim limitations are clear on their face, and do not give rise to any alleged indefinite or confusing concept of encoding a next data frame to a first data frame. Accordingly, Applicants respectfully submit that each of claims 1-17, 19-24 and 26 points out and distinctly claims that which Applicants regard as their invention. For at least the foregoing reasons, Applicants request that the above rejection of claims 1-17, 19-24 and 26 under 35 U.S.C. §112, ¶2 be withdrawn.

35 U.S.C. §103(a) Rejections

35 U.S.C. §103(a) Rejection over *ITU-T* in view of *Thyssen*

The Office Action rejects claims 1-17, 19-24 and 26 under 35 U.S.C. §103(a) as being obvious in light of “ITU-T Recommendation G.729” (hereinafter “*ITU-T*”) in view of *Thyssen*, USPN 6,813,602 (hereinafter “*Thyssen*”). For at least the following reasons, Applicants traverse the above rejection.

Applicants respectfully submit that each of the above rejected claims is not obvious in light of *ITU-T* and *Thyssen*, based at least on the failure of the references to teach or suggest (emphasis added):

“...after encoding the first data frame of the signal, **reusing the already generated first excitation to encode each subsequent data frame** of the signal until a voice activity of the signal is detected, each encoding of a respective subsequent data frame of the signal including
 altering the scale factor based on any change in a noise condition of the signal,
 and
 generating a respective non active voice frame based on the scale factor and
the already generated first excitation of the first data frame.”

as variously recited in current independent claims 1, 7, 13, and 20. As indicated in paragraph [0026] of the specification, a benefit of one embodiment of the invention is that an encoder need not generate a new random noise signal for each non active voice frame because altering the scale factors only is sufficient to approximately match the scaled random noise and resulting composite excitation signal to ambient noise conditions.

In rejecting the above claims, the Office Action relies on col. 3, lines 1-12 of *Thyssen* as allegedly disclosing re-using codevector entries in a random table with “L” codevectors, each of dimension “N”. However, although *Thyssen* discusses **reusing the entries** of a random table, Applicants understand the reference as **requiring a codevector be generated** whenever a random table entry is (re)used. More particularly, col. 30, line 19 to col. 31, line 20 of *Thyssen* describes at least some of the processing required to generate a particular code vector. Moreover, FIG. 8 and the discussion thereof in col. 40, lines 16-42 provides further discussion of the unwrapping (or unfolding) needed **to generate** a plurality of codevectors for a codebook entry.

As Applicants understand the reference, the calculations described in col. 30, line 19 to col. 31, line 20 and in col. 40, lines 16-42 of *Thyssen* are **required** whenever a random table entry is used to generate a code vector. In other words, the reference fails to describe any implementation of the process in FIG. 2, for example, which foregoes calculations to generate a code vector for a new frame – e.g. based on an already generated code vector for a previous frame. Accordingly, *Thyssen* fails to teach or suggest that an already generated code vector used for one data frame is reused for another data frame.

By contrast, each of currently amended claims 1, 7, 13, and 20 variously recite reusing an already generated first excitation of a first data frame of a signal to encode each subsequent data frame of the signal until a voice activity of the signal is detected. Even assuming *arguendo* that all other claim limitations are obvious in light of *Thyssen* and *ITU-T*, which Applicants do not agree, the references nevertheless fail to teach or suggest reusing an already generated first excitation of a first data frame of a signal to encode each subsequent data frame of the signal.

Accordingly, each of independent claims 1, 7, 13, and 20 is non-obvious in light of *ITU-T* and *Thyssen*, as are any claims depending therefrom. See M.P.E.P. §2143.03. For at least the foregoing reasons, Applicants request that the above 35 U.S.C. §103(a) rejection of claims 1-17, 19-24 and 26 based on *ITU-T* and *Thyssen* be withdrawn.

CONCLUSION

For at least the foregoing reasons, Applicants submit that the objections and rejections have been overcome. Therefore, claims 1-17, 19-24 and 26 are in condition for allowance and such action is earnestly solicited. The Examiner is respectfully requested to contact the undersigned by telephone if such contact would further the examination of the present application. Please charge any shortages and credit any overcharges to our Deposit Account number 02-2666.

Respectfully submitted,
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Date: July 30, 2008

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